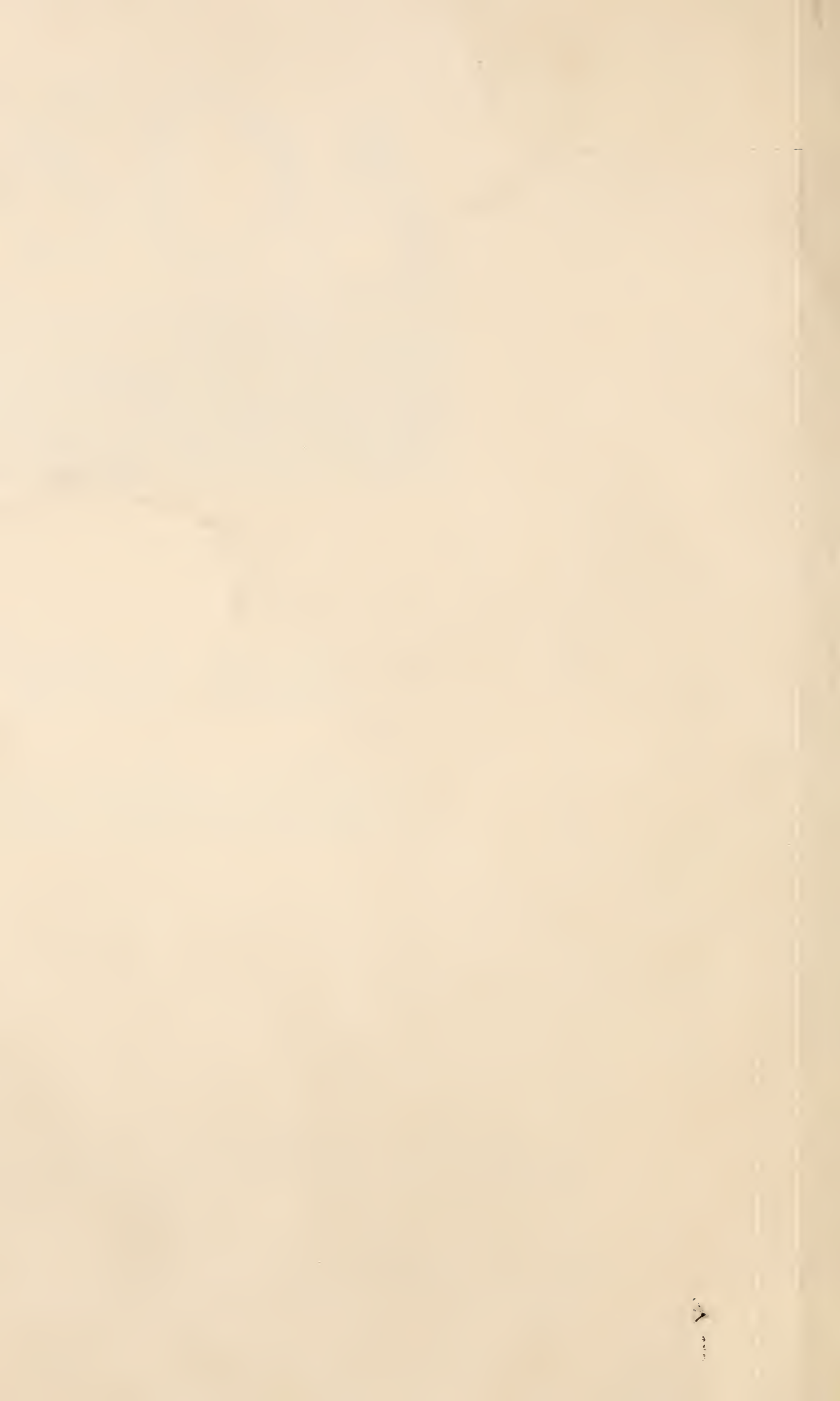


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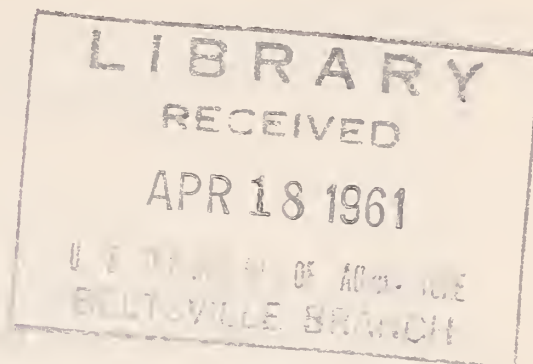
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# Tips on selecting fruits and vegetables

MARKETING BULLETIN NO. 13  
U.S. DEPARTMENT OF AGRICULTURE



The American fruit and vegetable industry is doing its best to make the widest possible variety of high-quality fruits and vegetables available to the public throughout all seasons of the year.

Consumers can take full advantage of this profusion of produce by learning how to select the fruits and vegetables best suited for their particular uses.

We hope this bulletin will also contribute to an increased public awareness of the values of fresh fruits and vegetables now offered in our markets.



Growth Through Agricultural Progress

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 "A Fruit and Vegetable Buying Guide for Consumers"*

*Issued April 1961*

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# **Tips on Selecting Fruits and Vegetables**

By W. W. Morrison, Marketing Specialist, Fruit and Vegetable Division,  
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## **MARKETING PROGRESS**

The modern retail supermarket displays a widely varied collection of fresh fruits and vegetables for the consumer's selection. These products are usually priced within the reach of the average shopper, and many are in reasonably constant supply during the entire year. The days when only a few of the less perishable fruits and vegetables are available during winter months have joined the storied "cracker barrel" in history.

The great variety of fresh products in the modern market is the result of improved methods of harvesting, handling, grading, refrigeration and transportation, which make possible long distance shipment of the most perishable fruits and vegetables. In addition, improved storage facilities for the less perishable products insure availability of retail supplies throughout the year. Fresh fruit and vegetable supplies from the widespread growing districts throughout the United States are also augmented and supplemented by imports from other nations. Sources of supply vary with the changing seasons, and with crop development in many divergent producing areas.

## **The consumer's dilemma**

What to choose from the displays of so many different kinds of fruits and vegetables is often a difficult decision. Variations in quality and condition among the offerings of any one particular commodity may make the selection exceedingly perplexing for the average consumer.

Most self-service food stores emphasize competitive prices, and provide the purchaser little assistance in selection of foods offered for sale. Manufacturers of packaged foods, including frozen and canned fruits and vegetables, usually attempt to cater to the needs, convenience, and demands of consumers by providing a reasonably well standardized product carrying a "brand" name or manufacturer's label identifying the product.

Fruit and vegetable growers also usually pack their products according to some rather definite standard of size and quality, and in most instances designate on shipping containers the standardized grades, or brand names that may indicate certain grades. Un-



fortunately the consumer seldom sees the products displayed in the original containers, because the size of most shipping containers is not suited to display purposes. Some fruits and vegetables are packed and sold in consumer size packages, which are usually marked with a brand name and often with the product grade. A brand name is sometimes marked on individual citrus fruits, avocados, and nuts. Generally, however, consumers must make selections according to their experience and the appearance of the product.

### **Standardized grades**

Most of the grades under which fruits and vegetables are packed in producing sections were developed by the U.S. Department of Agriculture and are known as U.S. grades. The minimum quality requirements for fruits and vegetables are clearly defined in the various grades.

Since all U.S. fruit and vegetable grades describe the minimum quality that will be permitted in each specific grade, there may be a difference in quality between lots of fruits or vegetables of the same grade designation. One lot may just meet minimum requirements for a certain grade, while another lot will be considerably above the minimum requirements; yet both lots will be classified as of the same grade. However, the commercial buyer who makes purchases under the U.S. grades knows that if he buys a certain grade, his purchases will not be below the quality designated as minimum for that grade.

Use of the grades developed by the U.S. Department of Agriculture is optional, but these grades are the basis for much of the wholesale trading in fruits and vegetables. The consumer is benefitted by their use in wholesale transactions to the extent that they enable the retailer to obtain supplies of nearly uniform quality.

Need for definite standards and grades to facilitate wholesale dealing in perishable produce became increasingly evident several years prior to World War I, and preliminary studies of standardization needs were started by USDA in 1914. The first U.S. grades for fruits or vegetables were those for potatoes which were completed in 1917. In January 1918, use of these grades became mandatory for licensees of the U.S. Food Administration for the duration of the war.

Since that time, establishment of new grade standards and revision of former standards has gone steadily forward. U.S. standards, for use in wholesale dealing, have been issued for 70 different fruits and vegetables, and 350 separate grades are specified. Consumer standards to designate quality requirements for fresh fruits and vegetables packed in small consumer-size packages have been established for 13 fresh fruits and vegetables.

### **Deterioration of fruits and vegetables**

The condition of fruits or vegetables offered to consumers depends on many factors: quality and condition of the product when harvested;



degree of care exercised in harvesting, grading, and packing; types of shipping packages used; time and temperature during transit or storage; and handling practices and time involved during the marketing process.

Natural deterioration is progressive and often very rapid. Many of the most perishable fruits and vegetables are shipped hundreds, or thousands, of miles and transit periods are rather long. But the care and skill with which the commodity is packaged and handled frequently offset in large degree the factors of time and distance.

Great progress has been made in handling and transporting fruits and vegetables, and increasingly greater care is taken in preparing them for market. Fruits and vegetables usually leave producing areas in good condition. But the grower or shipper cannot foresee the condition of the commodity when it reaches the retailer, who may necessarily hold it for some time before sale to the consumer.

## **Prices**

Fruits and vegetables are usually lowest in price in any given market area when the supply from nearby growing districts is most abundant, but this is not always true. For instance, in some eastern markets, peaches may be cheaper at the height of the Georgia and South Carolina harvesting season than when the local supply is sold.

Scarcity or abundance of a commodity regulates the price more often than any other factor, as demonstrated by the range in prices of some fruits and vegetables that may be scarce in one city and abundant in another. If a consumer knows approximate shipping seasons and origin of fruits and vegetables arriving from distant producing districts and has a good general idea of harvesting periods of commodities produced nearby, a reasonably accurate estimate can be made of relative market prices for various products.

Efficient buying of fruits and vegetables, therefore, may be aided considerably by some knowledge of market supply and demand. Such information, as well as daily wholesale prices, may generally be found in daily newspapers or learned from broadcasts by some radio and television stations. These agencies usually obtain their information from the Market News Service of regional and local offices of the U.S. Department of Agriculture.

Such market reports inform interested consumers of products available in greatest volume and hence most likely to be reasonably priced. Also, USDA's Agricultural Marketing Service makes public each month a list of foods currently in plentiful supply in most market areas of the country. Experience in buying at retail, with some idea of probable market trends and a knowledge of officially designated plentiful foods, will help consumers to select items which should represent excellent seasonal values. Remember that high prices do not necessarily indicate desirable quality, and low prices are certainly not always indicative of poor quality.



## At the retail market

Consumers usually wish to choose fruits and vegetables not only from a wide range of different fresh products, but also from varying qualities and sizes of the available commodities. In addition, they want to select from a constantly fresh supply. To provide such service, retailers must always face the expense of loss from spoilage and waste of this perishable merchandise.

In making selections from a display of fruits and vegetables, the consumer asks subconsciously: "What is best for my purposes?" Even if this seems evident, first preference may often be subordinated to price differences. If one is familiar with the factors that affect edible quality and those that affect appearance only, selections can frequently be made which not only suit personal preferences but also prove economical. Generally speaking, however, the excessive waste in preparation and inferior edible character of wilted, immature, overripe or deteriorated products are such as to make the best quality the least expensive in the end.

Selection of fruits and vegetables in good condition and of desirable flavor from retail displays by casual examination is in many cases a real challenge to an expert. There are no set rules or "easy to learn" instructions. Experience is the most reliable guide. There are, however, certain indications which, if observed, may aid consumers in learning to judge the real values of fruits and vegetables.

### SUGGESTIONS WORTH FOLLOWING

*Make your own selection of perishable produce.*—Personal inspection and selection of fruits and vegetables for the purposes intended usually give greatest satisfaction and economy. Trial and experience aid immensely.

*Do not buy merely because the price is low.*—It seldom pays to buy perishables just because the price appears extremely low. Unless the low price is because of an overabundance of the commodity at the time, the so-called "bargain" may be undesirable.

*Consider fruits and vegetables that are in season in nearby production areas.*—Fruits and vegetables grown in nearby areas may be comparatively low in price, particularly if there is an abundant supply.

*Do not buy more than needed.*—It is unwise to purchase greater quantities of fruits and vegetables than can be properly refrigerated and utilized without waste. However, modern home refrigeration does make maintenance of an adequate supply of most perishable produce possible and desirable.

*Avoid selections that show excessive deterioration.*—It is preferable to avoid commodities affected by decay or other serious deterioration, particularly if they are not intended for immediate use. Even with the most modern handling methods, some products decline rapidly

in quality following sales display. Frequently such off-quality stock can be bought at a reduced price, but the purchase may not prove economical if the waste in preparation offsets the price reduction.

*Remember the largest is not always the best.*—Large sized fruits and vegetables are not necessarily of the best quality, nor are they always economical. They may appear to be bargains, but may be entirely unsuited for the purpose for which they are to be used.

*Distinguish between defects that affect appearance and those that affect edible quality.*—Usually the higher grades of fresh fruits and vegetables are free or practically free from blemishes which may be present in some degree on those of lower grade. Many blemishes can be removed in normal preparation of the product and should not necessarily be regarded as detrimental.

*Watch for full measure and examine “faced” commodities.*—Small fruits, and occasionally small vegetables, are sold by measure in various types of containers. Sometimes these containers are packed or replaced with a loose or “slack” pack, which reduces the contents from the normal proper quantity. Containers may also be “faced” with the best specimens to enhance appearance. Sometimes the “face” layer may conceal ordinary or poor quality in the remainder of the package contents.

*Consider commodities officially designated as plentiful foods.*—Through newspapers, radio, television and other media, the U.S. Department of Agriculture informs the public periodically of products in greatest supply and thus worthy of consumers’ special attention.

*Do not handle fruits and vegetables unnecessarily.*—Rough handling of fruits and vegetables in the process of selection causes spoilage and waste for which consumers as a group must pay. When a fruit or vegetable is handled to better judge quality or condition, use reasonably thoughtful care to prevent injury.

## FRUITS

Appearance and quality are closely associated in many respects, but fine appearance does not always signify fine quality. Often a fruit with a very attractive appearance may have relatively poor quality because of a varietal characteristic or because of some internal condition such as overmaturity. Conversely, a fruit with poor appearance caused by surface imperfections may have excellent edible quality.

### Apples

There are many commercial varieties of apples, some of which are usually considered better suited for certain purposes than others. Several varieties are superior for dessert (fresh use), some are excellent for baking, and many are desirable for general purposes.



Among the many varieties favored as fresh fruit, the most commonly available are Delicious, McIntosh, Stayman, Jonathan, Wine-sap, and Golden Delicious. Most dessert varieties are also satisfactory for cooking purposes. Tart or slightly acid varieties such as Yellow Transparent, Gravenstein, Lodi, and Newton (Albemarle Pippin) are favored by many consumers for pies and other specific purposes. Rome Beauty, Rhode Island Greening, Northern Spy and several others, including a few favorite dessert varieties, are excellent for baking. Large or medium-large apples are most suitable for this purpose.

Degree of color and general appearance of apples displayed for sale varies according to the grade under which they are packed. Shipping packages are marked to indicate variety, grade, and size (number, minimum diameter, or diameter, or diameter range).

Apples from far Western States are usually packed to meet State grades and designated as Extra Fancy, Fancy, or C grade, or as a combination of any of these grades.

Apples from States east of the Rocky Mountains are usually graded on the basis of the U.S. grades. Most commonly used of these grades are U.S. Extra Fancy, U.S. Fancy, U.S. No. 1, and combinations thereof.

Since apples keep longer than most other fruits, they may be bought in quantity if desired, and kept for reasonable periods at cool temperatures. Some varieties have better keeping qualities than others, and each is in best condition during a certain season. Consumers should be able to identify a few of the important commercial varieties and know their characteristic qualities.

## Quality

Firm, crisp, bright, clean, well-colored apples with good flavor are most desirable. Flavor is a varietal characteristic which is also greatly influenced by the stage of maturity at which the fruit is picked and the conditions under which it is kept. Apples that are well colored for the variety usually have the full flavor of the particular variety, provided firmness and crispness of the flesh has not been impaired by age or other causes.

Immature apples often lack color, are usually poor in flavor, and sometimes have a shriveled appearance after having been held in storage. Overripe apples yield to slight pressure, and the flesh is usually soft, mealy, and lacking in flavor. Larger apples are more likely to be overripe than small- or medium-sized fruits, particularly toward the end of the season for the variety.

A defect known as "scald"—a storage and transportation disorder caused by gases given off by the apples themselves—may occasionally be noticed on apples during winter or spring months. It appears as brown-tinted irregular surface areas. It affects green fruit more

than that which is highly colored. In mild cases, scald merely causes light-brown tinting of the skin and only slightly affects the quality of the fruit. In severe cases, the affected areas are dark brown and the quality of the fruit is seriously affected. Oiled paper used as individual wrappers, or shredded and used as packing material, reduces and in most cases prevents damage by scald.

Apples showing internal breakdown, usually indicated by slight external softening and by mealy brown flesh, should be avoided.

Severe freezing or bruising of apples causes brown, water-soaked appearing skin with underlying flesh brown and mealy, watery, or mushy. Such apples are subject to further deterioration or decay and are undesirable.

Other defects, such as decay, insect injury or cuts, affect the quality of apples in varying degrees. Since most apples now offered for sale are packed to comply with either a Federal or State grade, it is unusual to find seriously defective commercially packed apples, except as a result of natural deterioration from age and temperature.

## **Apricots**

Apricots are usually picked when "mature," but in a hard stage in order that they may reach retail markets in firm condition. The finest quality and best flavor are found only in apricots that have ripened on the tree to not less than a firm ripe stage. Because such tree-ripened fruits are extremely perishable, they cannot be shipped long distances by ordinary methods. For this reason, tree-ripened apricots are usually found only in markets adjacent to the district in which they are grown.

Apricots are in season throughout the country during June, July, and August. Largest producing areas are in California, Oregon, and Washington.

## **Quality**

Well-matured apricots are plump and fairly firm, with juicy flesh and a uniformly orange-golden color. Usually such fruits have good flavor.

Immature apricots are usually greenish yellow in color, with firm to hard flesh. When displayed in retail markets, they may show slight shriveling. Desirable apricot flavor is usually lacking in immature fruit.

Bruised or injured apricots deteriorate very quickly and should be avoided. Beginning of decay is usually indicated by softness verging on mushiness and a dull, lifeless appearance. Any shrinking or shriveling will usually indicate insipid flavor.

## **Avocados**

Fruits vary greatly in shape, size, color and appearance, depending on variety. Shapes differ from spherical to pear- or bottle-shaped.



Sizes usually range from 5 or 6 ounces to 2 or 3 pounds. The skin may be paper-thin and relatively smooth; thick and smooth; or leathery, rough and shell-like. In color, avocados vary from green to dark mahogany or almost black. No constant relation has been found between color and flavor or between color and flesh texture.

The relatively smooth, thin-skinned types are more attractive, but the rougher, thicker-skinned fruits are usually equally as desirable in flavor and quality.

Avocados are harvested when hard, but like pears, ripen to full flavor when kept for a few days. Softening may be retarded by refrigeration, or may be hastened by keeping the fruit 2 or 3 days in a warm, humid place. Usually, ordinary room temperatures serve to ripen firm avocados satisfactorily in 3 to 5 days.

Avocados may be obtained during most months of the year, but are most plentiful from late summer throughout the winter.

### **Quality**

Heavy, medium-sized avocados which are fairly firm or are just beginning to soften, are usually the most desirable. Avocados are ready for use when the flesh is fairly firm to slightly soft, but not mushy or discolored. Desired condition can be detected by gentle pressure of the fingers. Thin-skinned types yield readily to pressure when at the best edible stage, while thick-skinned fruits yield only slightly. Texture of the flesh should be somewhat soft and buttery. Best fruit has a rich, delicate, nut-like flavor. Avocados lacking a buttery smoothness of flesh may have a flat, watery taste.

Hard or firm fruits that have all quality characteristics except the slight softness desirable for immediate use may be ripened with no loss of flavor.

Avocados are easily bruised, cut or punctured. Bruises or cuts not only detract from the appearance, but usually also adversely affect the quality of the flesh.

Appearance of avocados is sometimes marred by a light-brown irregular marking known as "scab." This is a superficial defect of the skin and does not affect the quality of the flesh.

Dark sunken spots, sometimes merging to form irregular patches with surfaces deeply cracked or broken, are indications that the flesh beneath such spots may be decayed.

### **Bananas**

Bananas are among the few fruits that reach their best quality and flavor after being harvested in a mature-green stage. When they are allowed to ripen on the plant, the flavor is strong and undesirable.

For immediate consumption, full-ripe fruit should be selected, but for use over a period of days or for cooking purposes, partly ripe or yellow-ripe fruit should be purchased. Ripening will proceed at normal room temperature. Bananas should never be stored in a refriger-



ator, although the temperature of the ordinary home refrigerator is not detrimental to ripe fruit for short periods, such as might be necessary to chill a banana salad or dessert.

An individual banana is described as "full" when it is plump and well developed, and "thin" when poorly developed.

After being shipped to market green in color and in an incomplete stage of ripening development, bananas are ripened under controlled temperature and humidity conditions.

## **Quality**

Good quality bananas are "full," firm, bright in appearance, and free from bruises or other injury. The stage of ripeness is indicated by the color of the skin. Best eating quality has been reached when the solid yellow color is flecked with small brown speckling. At this stage, the flesh is mellow and the flavor fully developed. Bananas with green tips or with practically solid yellow color have not developed their full flavor potential.

Several commercial varieties of bananas differ in minor characteristics; but, except for size variations, these differences are not important to consumers. The red banana, although of fine flavor and quality, is a specialty fruit not well known and not usually available in most areas.

Poor condition is indicated by badly discolored skin and mushy flesh, sometimes discolored. Occasionally, the skin may be entirely brown and yet the flesh may be still in prime condition if it is fairly firm and not discolored.

Bruised fruit is undesirable because of probable rapid deterioration and excessive waste.

Bananas that have become too cold at some time prior to retail display may have a dull, aged appearance. Such fruit will not ripen properly to the bright color of prime fruit and will usually have poor flavor.

Decay is commonly indicated by the presence of mold on discolored skins.

## **Blackberries, boysenberries, dewberries, loganberries, raspberries, and youngberries**

### **Quality**

In this group of fruits, quality is indicated by bright, clean, fresh appearance combined with uniform good color and plumpness of individual berries. Good berries should be free from moisture, dirt, leaves or stems, and adhering caps.

Overripe berries are usually dull in color, generally soft, and often wet or crushed. Excessive waste may be involved in the use of soft or leaky berries and such fruit should be avoided.

Bruising, natural breakdown, or decay may cause berries to be very soft and wet. A wet or leaky condition is indicated by stained containers and general appearance of the fruit. Sometimes stains on containers are plainly evident, but at other times may not be noticed until the sides of the container are exposed. Soft, leaky, damaged, or decaying berries are not always visible in a casual observation, particularly if they are located at the bottom or in the center of the container. Decay can be detected on visible berries by the presence of molds.

Stems or stem caps usually adhere firmly to immature fruit but not to mature fruit. Thus the presence of berries with stems or stem caps may indicate immaturity and undeveloped flavor.

A berry with a number of cells or drupelets that are green or off-color will not have as good flavor as one which has normal ripe color on all cells.

## **Blueberries**

Both cultivated and wild blueberries are sold in many markets. Cultivated (domesticated) varieties usually yield large berries, and several of the new improved varieties have outstanding flavor. Wild types have small to large sized fruits, depending on the type, and have distinctive flavor. Some wild type blueberries are erroneously called huckleberries.

## **Quality**

Blueberries that are plump, fresh in appearance, fairly uniform in size, clean, dry, free from leaves or stems, and with full color throughout the lot, are usually of good quality.

Ripe berries may be covered with from slight to very noticeable light colored "bloom," which is a natural protective wax overlying the true, darker color. The presence and intensity of "bloom" varies with varieties.

Freedom from sticky juice indicates good quality berries. Stickiness may be caused by natural breakdown, decay, or some type of mechanical injury.

Overripe berries or berries held too long after picking should be avoided. They have a dull, lifeless appearance and are often soft and watery. Aged berries may also be somewhat shriveled.

Decay is usually indicated by the presence of molds.

## **Cherries**

Most sweet cherries are grown in the far Western States, but some Eastern States have a limited production. Important dark fleshed varieties are Bing, Lambert, Black Tartarian, Republican, Windsor, and Schmidt. Only one light fleshed variety, the Royal Ann (Napoleon), is commercially important.



Sour or "tart" cherries are produced in greatest volume in States bordering the Great Lakes and in some Eastern States. Important varieties are Montmorency, English Morello, and Early Richmond.

Sweet cherries are eaten principally as fresh fruit, while sour cherries are used primarily for culinary purposes, particularly pie making.

The cherry season extends from May through August.

### **Quality**

Good quality in cherries is indicated by a bright, fresh appearance, plumpness, and good color for the variety. Bings and Lamberts should be dark mahogany in color and Black Tartarians, Republicans and Windsors purplish-black. Schmidts should be purplish-red, and Royal Anns light golden color with slight to pronounced pink or light red blush. Both Montmorencys and Early Richmonds should be full clear medium red and English Morello deep blood-red in color.

Sweet cherries should be firm and sour cherries fairly firm.

Immature cherries are usually slightly smaller than comparable ripe fruits, are usually hard and poor in color, and are likely to lack juice and be overly acid.

Overmature or stale cherries are usually soft, and dull in appearance. They may also be noticeably shriveled or leaky.

Cherries that have been bruised, cut, or crushed are not desirable. Molds develop rapidly at point of injury. Such injury, or decay, is often indicated by damp, stained and leaking containers.

### **Cranberries**

Cranberries vary in size and color according to variety and maturity. They are rarely, if ever, sold at retail under variety names. Most common on the markets are the rather large, bright-red, quite tart varieties and the small darker colored types which are usually somewhat sweeter.

Cranberries are generally available through fall and winter months.

### **Quality**

Fresh, plump appearance, combined with firmness and high luster, indicates good quality. Poor quality and condition are indicated by shriveling, discoloration, dull appearance or softness.

Cranberries from cold storage will show some dampness or moisture for a very short time after removal from storage. Such dampness does not indicate poor quality.

Cranberries that show sticky juice from injury are usually leathery with somewhat discolored flesh. Such fruit is undesirable.

### **Figs**

Practically all commercial production of figs is in California, although a few are grown in the Southeastern States and Texas. Because of their extremely perishable nature, only a small percentage of the production is shipped as fresh fruit.



## Quality

Fresh figs must be fully ripe to be of good quality. A ripe fig is soft or fairly soft to the touch and may vary in color from greenish-yellow to purplish or nearly black, depending on the variety. Ripeness and quality are further denoted by the presence of juice of syrup consistency at the "eye" of the fig. Since varieties vary in size, fruit cannot be judged on that basis.

Souring and fermentation usually start rather quickly in ripe figs. A characteristic odor is noticeable when the fruit begins to sour, and fermentation proceeds rapidly.

Bruises or skin breaks cause very rapid deterioration, and fruits showing such injuries should be avoided.

## Grapefruit

Grapefruit is commercially grown in Florida, Texas, California, Arizona, Puerto Rico, and Cuba.

Some fruit from certain producing areas shows varying degrees of "russeting," or other discoloration, which appears as a reddish-brown, brown, or reddish-yellow overcast of the background yellow skin color. Such discoloration has little or no effect on flavor, and the choice of fruits showing various degrees of discoloration is thus simply a matter of personal color preference. Florida and Texas grapefruit is called "bright" when the surface shows relatively little discoloration, and may be designated by various other color-descriptive terms such as "russet" or "bronze" when considerable areas of the surface show russeting or other types of discoloration.

Retail displays frequently offer seedless varieties as well as those with seeds, and often offer both white-fleshed and pink-fleshed fruit. Selection is again a matter of personal preference.

## Quality

Fruits of good quality are firm but springy to the touch, well shaped, and heavy for their size. Heavy, relatively smooth fruits are usually thin-skinned and have a desirable juice content. Soft, wilted, flabby, or excessively lightweight fruits are usually undesirable.

Generally speaking, surface defects found on grapefruit (such as scale, scars, thorn scratches, and discoloration) are minor in nature and do not affect edible quality.

Fruits that are somewhat pointed at the stem end are apt to be thick-skinned. This applies particularly if the skin is excessively rough, ridged, or wrinkled. Softening at the stem end may indicate the start of stem-end rot, which is not yet visible.

Decay sometimes appears as a soft, discolored area on the peel at the stem end ("button") of the fruit, or may appear as a water-soaked area with little of the natural yellow color remaining, and with the peel of the affected area so soft that it breaks easily. Decay is also frequently accompanied by mold growth.

Fruits showing decay in any degree should be avoided. Decay usually affects the flavor, making the taste flat and somewhat bitter.

## Grapes

Fresh grapes sold at most retail markets are of two separate and distinct types—the European or *Vinifera*, grown chiefly in California; and the American, grown principally in Eastern and Central States.

Western grapes (European type) usually have a higher sugar and solids content, and many are larger than the Eastern (American) type. Skin and pulp of the Western type do not separate, but seeds, if any, separate readily from the pulp. The more popular varieties of Western table grapes are Thompson Seedless, Flame Tokay, Ribier, Cardinal, Almeira, Red Malaga, Malaga, Emperor, and Muscat.

Eastern grapes are grown to some extent in many States, but the largest supplies sold for consumption as fresh fruit reach eastern and midwestern markets from production areas in New York, Michigan, and Pennsylvania. The most common varieties are Concord, Catawba, Niagara, Delaware, Fredonia, Moore Early, and Worden.

## Quality

Table grapes of either type should be mature, plump, and fresh in appearance, with individual berries firmly attached to stems. High color for the variety is generally indicative of well developed sugar content and flavor.

Usually the white or green grapes of both European and American types are at their best for flavor and sweetness when they are turning to an amber color. A few good varieties of American type grapes, however, remain green in color when fully ripe.

A few small, sunburned, wrinkled, raisined, or unripened berries detract somewhat from the appearance of a bunch of grapes but do not indicate poor flavor or quality for the bunch as a whole.

Bunches of grapes that have dry and brittle stems usually “shatter” (drop from stems) rather badly. Gentle shaking of a bunch will reveal the tendency to shatter.

Western (European type) grapes injured by freezing have a dull, lifeless appearance, become sticky, and shatter badly. When berries are pulled from the capstem, the “brush” (the small bundle of fibers that extends from the capstem into the berry) is somewhat discolored and shorter than normal. Eastern (native American type) grapes injured by freezing are shriveled and the pulp is usually milky and opaque. Grapes that have been frozen have a rather flat flavor which makes them less desirable.

Decay is indicated by mold, wet berries, and frequently by leaking and stained containers. Sometimes berries may show evidence of decay at the stem attachment.



## **Lemons**

California is the principal producing State, although some lemons are shipped from Arizona, and Texas and Florida produce a few for local consumption.

### **Quality**

Best lemons are firm, bright, heavy for their size, and have a reasonably fine textured skin. Deep yellow color usually indicates less acidity and more juice than does greenish-yellow or light yellow color. If highest acid flavor is desired, the lighter colored fruit should be chosen.

Shriveled or hard-skinned lemons, or those soft or spongy to the touch, are undesirable. They may be aged, dry, mechanically injured, or affected by internal discoloration and deterioration. Fruits that have been mechanically injured are subject to molds.

Decay may be indicated by water-soaked spots, by mold, or may appear as a discolored, soft area usually starting at the stem end.

## **Limes**

### **Quality**

Firm limes with good green color, heavy for their size and fresh in appearance, are the most desirable. Yellow limes may lack the usually preferred acidity.

Limes sometimes become affected with purplish-brown colored, irregularly-shaped spots caused by scald. Occasionally entire fruits turn brown. Such fruit is poor in appearance, but in some cases the flesh may not be affected.

Decay and mold may affect limes in the same manner described for lemons.

## **Nectarines**

Nectarines are utilized primarily as a fresh dessert fruit. Their attractive color and distinctive flavor have won them consumer favor in recent years, and production and shipment have increased rapidly. California is the most important producing State.

### **Quality**

Best quality nectarines are plump, clean, fresh in appearance, firm but not hard, and well colored (usually orange-yellow to red, although certain good varieties have a green ground color). A slight softening at the most prominent side area (extending vertically along the "seam") is an indication that the fruit is at about the best stage for dessert consumption.

Immature nectarines are usually hard, and may be dull in appearance or somewhat shriveled. However, some fruit which seems somewhat hard to those inexperienced with this fruit may be fully mature and may ripen satisfactorily in a day or two at room tempera-



ture. Shriveling indicates leathery flesh texture and poor flavor. Overmature fruit is usually soft, easily bruised, and may be leaky. Such condition invites decay and detracts from flavor.

Some nectarine varieties may show very noticeable russeting or yellow-to-brown "staining" of the skin. In sufficient quantity this may detract from the appearance, but unless the russeting causes unhealed skin cracks, these factors should not affect internal quality. Unhealed cracks are subject to mold and decay. Wet fruit and stained containers are usually evidence of either mechanical injury, breakdown of overripe fruit, or the beginning of decay.

## Oranges

California, Florida, Texas, and Arizona produce practically all of the usual market supply. Louisiana produces limited supplies for local markets.

Leading varieties from California and Arizona are Washington Navels and Valencias. The Navel season begins in November and usually continues to early May; the Valencia season starts then and continues through summer and fall.

Washington Navels are seedless, and characteristically have thicker, somewhat more pebbled skin than Valencias, and segments which separate more easily. Valencias usually have from one to six seeds.

Principal early varieties from Florida are Parson Brown and Hamlin. They are in season during October and early November. Shipments of the Pineapple and Temple varieties usually start in December and continue through early March. The Florida Valencia season starts in March and usually extends through June. A few other orange varieties and hybrid types, such as Tangelos, are becoming available in greater volume in the markets each year.

Navels are preferred by many consumers for eating as fresh fruit because of the comparative ease with which they peel and separate into segments without loss of juice. Valencias and other thin-skinned varieties are usually preferred as a source of fresh juice.

California and Arizona oranges are not subject to russeting and are usually deeper in orange color than oranges from other producing areas. Florida and Texas oranges are frequently russeted and may be designated as "bright," "russet," or "bronze" depending on the extent of russeting or similar discoloration of the skin surface. Such russeting or discoloration does not affect flavor. Oranges from these States are also frequently dyed on the outer peel to improve appearance. This coloring does not affect edible quality. Individual fruits so colored are stamped "color added."

## Quality

Oranges of highest quality are firm, heavy for size, and have good color and reasonably fine textured skin for the variety. Puffy or

spongy oranges are apt to be light in weight, lacking in juice content, and poor in quality.

Oranges are practically always sound when shipped, but occasionally decay may develop before the fruit reaches the consumer. Decay is indicated by soft surface areas which are water-soaked in appearance, and may break under slight pressure. Frequently, decayed areas are covered by mold.

Age or injury may cause fruit to be wilted, shriveled, or flabby. Such oranges are undesirable.

## **Peaches**

Peach varieties fall into one of two basic types: "clingstone" or "freestone," although a few varieties are known as "semi-clingstone" or "semi-freestone." Within each of these two types are two color classes: "yellow-fleshed" and "white-fleshed."

Freestone varieties are most popular for fresh dessert use and freezing. Clingstone varieties are used principally for commercial canning but are sometimes sold for use as fresh fruit. Most of the peaches commonly offered for sale are "yellow-fleshed."

## **Quality**

Good quality peaches should be bright and fresh in appearance and have a "ground" (background) color that is either yellowish or creamy. Red color or "blush" may also be present in differing degree, depending on variety and preharvest weather, but red color alone is not a true sign of edible quality. Peaches should be fairly firm or firm, but not hard.

Due to their highly perishable nature, peaches are most frequently picked in a mature-hard stage for long distance shipment, and may arrive on the market too firm for immediate use. A creamy or yellowish ground color usually indicates that such peaches will ripen in a reasonably satisfactory manner. However, peaches are sometimes picked so immature that they cannot ripen. Such fruit will shrivel or become flabby, with the flesh tough, rubbery and lacking in flavor. Overmature or soft peaches should be avoided, unless they are for immediate use.

Bruised fruit may involve excessive waste. Bruised flesh is usually soft and discolored even though the outer skin covering the bruise may not be discolored. Decay usually appears as brown circular spots of varying sizes and progresses very rapidly, frequently causing complete loss of the fruit. Decay also spreads quickly to adjacent fruits.

## **Pears**

The Bartlett variety, shipped from California from early August through September, and from Oregon and Washington from late



August through November, is one of the leading dessert varieties. This variety is also used extensively for commercial and home canning.

Other important dessert varieties which follow Bartletts in the market are Bosc, Comice, Anjou, and Winter Nelis. All are grown principally in Western States. Most of these varieties, particularly Anjou and Nelis, keep well in cold storage and may be available over a period of several months. Varieties produced in less volume in various States are Seckel, Keiffer, Garber, and Flemish Beauty.

Pears normally develop to highest quality if picked when mature but still hard and green, and subsequently ripened in transit and in storage. Flesh of pears ripened after picking is usually of fine texture, while the flesh of tree-ripened pears is often coarse or woody, and in some varieties somewhat gritty. In many large city markets wholesale dealers who specialize in pears have facilities for ripening the fruit under optimum conditions of temperature and humidity to obtain maximum edible quality at the time of sale to retailers. Pears which are approaching a desirable stage of ripeness will continue to ripen satisfactorily at the ordinary temperature of most homes.

### Quality

Pears of good edible quality are clean, uninjured by cuts or bruises, firm or fairly firm but not hard; and are not wilted, shriveled or materially misshapen. A few varieties show characteristic light-brown surface russeting which in no way affects quality.

Some varieties are in prime condition while still light green or greenish-yellow in color; others may be yellow and yet not ripened to a desirable stage for eating. Pears that yield easily to pressure near the stem or at side surfaces are usually ready for immediate consumption, but may be too ripe to hold for more than a few hours.

Some varieties are affected by "scald," which in mild cases discolors the skin and slightly affects the flesh. In severe cases the fruit is badly discolored and unattractive, with the flesh seriously affected in quality and possibly starting to decay.

Wilted or shriveled pears may have been picked at such an immature stage that ripening cannot proceed properly. Flavor and quality in such fruit is usually lacking. Pears with a water-soaked appearance are likely to be soft and mushy internally, and should be avoided. "Limb rubs" or other scars frequently appear on pears as a dark brown roughening of the surface of the fruit. If pronounced, they may indicate woody spots in the underlying flesh, but if slight they affect appearance only.

Small corky areas sometimes affect the flesh of the Anjou, which is the principal variety offered for sale throughout winter months. This condition is called "internal cork spot" and may occasionally be detected on external examination by the presence of small lumps and relatively small green spots on the skin surface. Decay in pears is usually indicated by mold or very dark discoloration.



## **Pineapples**

The only commercial production of pineapples in the United States is in Hawaii, and Puerto Rico, but many are imported from Cuba, Bermuda, Costa Rica, Mexico, and the Bahamas. Pineapples are picked when mature, but in a hard stage so they will reach distant markets in good condition.

The two principal imported varieties are Red Spanish and Smooth Cayenne. When ripe the Red Spanish is reddish-brown, light-orange or golden-yellow in color, and the Smooth Cayenne is light yellow to deep golden-yellow. Fruits of both varieties have flat, almost hollow "eyes" when mature and properly ripened. A less well-known variety, the "Sugar Loaf" from Mexico, remains green when fully ripe. Immature pineapples are usually a dull light-green to greenish-yellow in color with "eyes" that are only partially developed, and somewhat sunken. Such immature fruits have a dried or shriveled appearance.

### **Quality**

Good quality pineapples are mature, firm, bright, and clean in appearance; golden-yellow, orange-yellow, or reddish-brown in color when ripe (except the "Sugar Loaf" variety); and possess a distinctly fragrant, fruity, pineapple odor. Usually the heavier the fruit in relation to its size, the better the quality, provided the fruit is mature.

Pineapples picked when immature will not ripen properly. On the market such fruit is dull and lifeless in appearance with exterior characteristics as described above. The flavor is very acid and undesirable. Bruises appear as discolored areas on the surfaces of pineapples and are subject to fairly rapid softening, discoloration, and possibly decay. Bruised fruit should be avoided if possible.

If held in a relatively dry atmosphere, pineapples lose moisture, and will usually shrink and develop drab, poor color. Injury by sunburn is indicated by a light-colored area on the side of the fruit. The flesh underlying the sunburned area is usually somewhat hard, pithy and dry.

Decay appears as soft, watery areas which are usually found at the base or around the "eyes" of the fruit. Mold may be present, and often a distinct unpleasant odor is noticeable. Decay also may be indicated by the presence of moisture. It is important to examine pineapples carefully for indications of decay since it progresses very rapidly and may soon cause the fruit to be worthless.

## **Plums and prunes**

Leading dessert varieties of plums are: Beauty, Santa Rosa, President, Duarte, Burbank, Kelsey, Tragedy, Wickson, Eldorado, Reine Claude (Green Gage), Becky Smith, Shiro, Standard Prune, and Purple Plums, which in the past were known as Italian Prunes. Purple plums when dehydrated, however, are known as dried prunes.



Actually prunes are plums which, unlike most plum varieties, are “freestones” with pits which separate readily from the flesh when the fruit is fully ripe. This makes them particularly suitable for drying purposes since they can be dried without removal of the pit and without fermentation of flesh surrounding the pit.

### **Quality**

Plums and prunes of good quality are plump, clean, fresh in appearance, fully colored for the variety, and soft enough to yield to slight pressure. Some varieties are fully ripe when the color is yellowish-green, others when orange-red in color, and still others when their color is purplish-blue or almost black. A pleasing aroma indicates full ripeness of some varieties.

Immature fruit does not ripen satisfactorily and is hard or shriveled, with poor color and flavor. Overmature fruit is generally soft and often leaky. It is subject to decay and may have insipid flavor.

Presence of moisture or stained containers is usually evidence of some form of injury, soft breakdown, or decay. Sunburn, which sometimes affects plums and prunes, is generally indicated by brownish-red or brown color on the cheek of the fruit. Sunburned fruit is usually poor in color and flavor. Growth cracks, unless well healed, are an invitation to decay organisms.

### **Strawberries**

Large strawberries are usually preferred for dessert purposes because of their attractive appearance. However, flavor is a varietal characteristic, and size is not necessarily an indication of flavor. A great number of varieties have been developed for adaptability to many varying soils and climatic conditions. For this reason, the purchase of berries to fit individual flavor preference must depend on a knowledge of varieties or on actual taste trial.

### **Quality**

Quality in strawberries is indicated by a fresh, clean, bright appearance, and a generally full red color. The fruit should be free from moisture or dirt, and the cap and a portion of stem should be attached. Small misshapen berries are usually poor in quality and flavor, and often contain small, hard green areas.

Overripe strawberries, or those that are not fresh, have a dull, lusterless or shrunken appearance, and are apt to be wet or leaky. The presence of soft, damaged or decayed berries is often indicated by a stained container.

Decay can usually be detected by the presence of mold, which may be present anywhere in the container, but may not be evident in the visible display. Mold or decay, not otherwise apparent, can often be detected by tipping the container until some berries near the center of

the container can be observed. Berries without caps are highly susceptible to mold and decay.

## **Tangerines**

Tangerines and Mandarin orange types are produced principally in Florida and other Gulf States.

These tangerine type fruits are generally thin-skinned and are usually oblate, or decidedly flattened at the ends. The skin is easily removed and segments separate readily; the flavor is distinctive and pleasing, and the aroma pungent and aromatic.

## **Quality**

Good quality tangerines or Mandarin oranges are bright, clean, well colored (deep yellow to deep orange), and heavy in relation to size. Because of the looseness of skin, these fruits are not necessarily firm or fairly firm to the touch. Fruits showing mold, decay, or lack of luster in appearance should be avoided. Pronounced softening at the stem may indicate the start of stem-end rot.

## **MELONS**

Selection of some types of melons for quality and flavor is difficult—it often tests the skill of the most experienced buyer. Sweetness and flavor in melons are not fully developed until the full-ripe stage of maturity is reached. Ripeness in most types (other than water-melons) is indicated by slight softening of a small area surrounding the “eye” or “button” at the blossom end to a degree that it yields slightly to moderate pressure.

Usually the distinctive odor that some types of melons diffuse increases as ripening develops and is most perceptible when the full stage of ripening is reached. Also, in some kinds of melons, color changing from green or gray-green toward a yellowish tinge indicates increased ripeness, and desirable maturity is indicated by evidence of easy, natural separation of the melon from the stem at harvest time. But no indication is infallible. Sometimes one indication will serve satisfactorily, but more often a combination of indications must be considered in selection of good quality.

Several types of melons (cantaloups, Honeydew, Honey Ball, Casaba, Crenshaw and Persian) often are not available at retail markets in the fully ripe stage most desirable for immediate use. However, by observing available indications of maturity, selections can be made which will develop to a desirable stage if kept at ordinary room temperatures for a reasonably short time.

## **Cantaloups (muskmelons)**

Cantaloups are picked at stages of maturity known as “full-slip” and “half-slip.” Full-slip is the stage of maturity at which the stem



separates easily and cleanly from the melon, leaving a shallow saucer-like depression. At this stage cantaloups are considered to be fully matured. Half-slip is the stage at which the stem separates less readily, leaving only part of the stem-scar sunken and smooth and the other part rough, with an occasional portion of stem adhering to the fruit. This indicates somewhat less desirable maturity than the "full-slip" stage.

There are many varieties of cantaloups varying in color of flesh, density of surface "netting" and general shape. Most of the cantaloup varieties presently grown commercially have salmon-orange colored flesh.

## Quality

Sweetness, desirable flavor and fine-textured flesh are the factors necessary in high quality cantaloups. These are present only in well-matured melons.

Stage of maturity is indicated by the netting or veining of the outer rind, the condition of the scar at the stem end, the overall color of the melon and by the usually perceptible aroma. Netting should be coarse and corky, ash-gray or yellowish-gray in color, and should stand out in bold relief on the melon surface. The stem-scar should be free from adhering portions of stem to indicate full maturity when the melon was harvested. The "ground" (background) color of the rind should be considerably lighter than the relatively dark dull-green of a growing melon, and tending toward a yellowish-buff or yellowish-gray color. Distinctive cantaloup aroma usually accompanies suitable maturity and desirable flavor.

Slight softening at the blossom end of cantaloups is considered an indication of ripeness, but since this condition can be induced by repeated pressure, this may not always serve as a reliable guide.

Overmaturity is usually indicated by a very pronounced yellow ground color and possibly by softening of the rind. The flesh of over-mature melons is apt to be soft, watery, and insipid in flavor.

Immature cantaloups are usually poorly "netted" with widely separated or flat netting and grayish-green surface color showing through the netting. Frequently part of the stem remains, or may have been forcibly pulled from the melon, leaving a deep irregular scar. Immature melons usually have tough and flavorless flesh.

Severe bruises soften the flesh underlying bruised areas, thus making a badly bruised cantaloup undesirable. Shriveling or flabbiness indicate lack of freshness, and poor flavor.

Surface mold or mildew which has not penetrated the rind through cuts or injuries or into the flesh at the stem scar generally does not affect edible quality. Decay is indicated by soft sunken spots or areas on the surface, or by mold or moisture at the stem end.

## **Casaba**

Casaba melons are nearly round in shape, but may be somewhat pointed at the stem end. Their rinds are not netted, but are wrinkled or furrowed lengthwise of the melons. They are harvested relatively late in the season and are usually ripened in storage. The stems of Casaba melons do not separate from the fruits as soon as the melons are fully mature (as occurs in cantaloups). The usual weight range is about 5 to 7 pounds per melon.

### **Quality**

Casaba melons of good quality have a thick, soft, creamy-white, sweet juicy flesh, without aroma. Best quality is found only in properly ripened melons. Ripeness is usually indicated by yellow rind color and slight softening at the blossom end. Decay usually appears as dark, sunken, water-soaked areas frequently accompanied by mold growth.

## **Crenshaw**

Crenshaw melons mature late in the fall and are usually ripened in storage. Melons are pointed at the stem end and rounded at the blossom end, and usually weigh from 4 to 8 pounds. The rind is generally smooth, with no netting and very little ribbing, and is usually mottled green and gold in color when displayed for sale.

### **Quality**

Good quality Crenshaw melons have thick, soft, distinctly sweet, juicy, pale-orange colored flesh with a rich aroma. They do not attain fine quality until fully ripe.

Ripeness is indicated by a preponderance of bright, deep golden-yellow external color with remaining green areas turning yellow, and by a change in the external tissue from hard or very firm to a perceptibly lesser degree of firmness which yields very slightly to moderate pressure, particularly at the blossom end of the melons. Ripe Crenshaw melons also diffuse a distinctly pleasing aroma.

Crenshaw melons should be examined carefully for decay in the form of slightly sunken, water-soaked areas which may spread rapidly through the rind into the flesh.

## **Honey Ball**

The Honey Ball is a small, round, usually slightly-netted melon which may vary in color from whitish-green or gray to light yellow.

### **Quality**

Good quality Honey Ball melons should be fully matured and have a light green colored, thick, sweet, fine flavored flesh with a distinct and pleasing aroma. When ready for use, the rind has become light-yellowish in color and yields slightly to pressure. As with cantaloups,



desirable maturity may be judged by indications of the stem scar "full-slip" stage at time of harvesting.

Bruised melons and those with growth cracks should be avoided as the flesh is likely to be soft and insipid. Decay is usually indicated by mold, or dark, sunken, watery appearing areas.

## **Honeydew**

Honeydew melons are bluntly oval in shape and considerably larger than the Honey Ball. Honeydews usually weigh from 4 to 8 pounds. They are whitish-green in color, and change to creamy-white or creamy-yellow when fully ripe. The rind is firm and usually very smooth, but may occasionally show traces of netting. Honeydews keep well and may be held for ripening at ordinary temperatures.

### **Quality**

To be of the most desirable quality, Honeydew mellons should be fully ripe, with creamy outer color and pale green flesh which is sweet, juicy and fine-textured.

In addition to color, ripeness may be indicated by a faint pleasant fruity aroma, and by a slight softening at the blossom end. Since these melons are usually cut from the vine when harvested, the condition of the stem does not indicate the stage of maturity.

Severe bruises, cuts or other damaging defects can be readily detected if present. Decay generally appears as sunken water-soaked spots on which pink, black or near-black dots may be present. In advanced stages, such sunken spots may penetrate the rind and seriously affect the flesh.

## **Persian**

Persian melons somewhat resemble cantaloups in first appearance. They are round and netted but much larger in size than cantaloups, with finer, flatter, less pronounced netting, and deeper green background color. The average weight of Persian melons is about 6 or 7 pounds.

### **Quality**

Highest quality Persion melons are fully ripe, with very thick distinctly sweet, orange-colored, fine textured flesh. Ripeness is indicated by a firm, rather than hard rind; slight softening at the blossom end; by aroma; and by a change in exterior color from deep green to a duller, lighter gray-green or bronze-green. Immaturity is indicated by a green, glassy appearance.

Decay is indicated by soft, sunken spots on the surface and by mold or moisture on the stem end.

## **Watermelons**

While many varieties of watermelons are grown throughout the United States, the largest commercial shipments are confined to a very few varieties which have been found most suitable for volume production, shipment and sale.

### **Quality**

The essential quality in watermelons is maturity. It is often extremely difficult for even an experienced buyer to determine the stage of ripeness of a watermelon without an opportunity to observe interior color and texture. Because few consumers can properly keep or utilize a whole watermelon, and to best allow consumers to judge their purchases, most markets usually display cut melons in halves or quarters. Such display allows the consumer to judge color of flesh, which should be good red; color of seeds (usually dark brown or black in fully matured melons); and flesh texture, which should be firm and succulent.

Light colored flesh and white seeds indicate immaturity and consequent lack of flavor and sweetness. Dry, mealy flesh, or watery, stringy flesh showing darkening and softening of tissues next to seeds, indicate overmaturity or excessive elapsed time after harvesting. In either case desirable crispness and flavor will be lacking.

A hard white streak located lengthwise through the flesh indicates a condition known as "white heart" which makes the edible quality very undesirable. Consumers seldom find decay a problem in melons freshly cut for display, but the outer rind surface should be examined for injuries penetrating the rind.

## **VEGETABLES**

The practically year-round supplies of many kinds of fresh vegetables in modern markets present an opportunity for diet diversification not possible even a few years ago. Due to the number of commodities now available, the difficulties of selecting the types and qualities to best meet desires and needs have probably increased rather than diminished.

### **Artichokes**

Two very unlike vegetables are called artichokes. One, known as the French or Globe Artichoke, is commonly seen in retail displays. The other, known as the Jerusalem Artichoke, is a thick potato-like tuber that grows underground on a plant related to the sunflower. These tubers are used occasionally for pickling, but are seldom seen in most retail markets.

The Globe Artichoke is the large unopened flower bud of a plant of the thistle type. It is a very perishable product and becomes tough



with age. Globe Artichokes are commercially produced only in certain coastal areas of California, and must be shipped long distances to most markets.

### **Quality**

The most desirable Globe Artichokes are compact, plump, heavy in relation to size, somewhat globular, and with large, fresh, fleshy, tightly-clinging green leaf scales. Freshness is indicated by the green color which with age or injury becomes partially brown.

Overmature artichokes have hard-tipped leaf scales which are opening or spreading; also the center formation may be fuzzy and dark pink or purple in color. Leaf scales on such overmature specimens are tough and woody when cooked and may be undesirably strong in flavor.

Seriously discolored artichokes are usually bruised, or lacking in freshness. Bruises appear as dark off-colored areas at the point of injury. They may also show mold growth. Bruised or seriously discolored artichokes usually turn grayish-black or black when cooked.

Worm injury is generally partially discernible at or near the base end of the bud. It may appear negligible from the outside but may extend deeply into the heart and cause excessive waste. The size of Globe Artichokes is not important in relation to quality and flavor.

### **Asparagus**

Asparagus is cut a few inches below the surface of the ground when the spears have developed the desired length above ground. If growth is rapid, a green shoot 6 to 10 inches long may be obtained before any part of it has become tough. After a few inches of the tip are green, the white portion below the ground begins to toughen. Thus the white portion of asparagus as commonly displayed in markets is generally tough, but can be used for flavoring or for soup.

### **Quality**

To be of best quality, asparagus should be fresh and firm with closed compact tips and the entire green portion tender. Asparagus ages rapidly after cutting; tips become partially open, spread, or wilted, and stalks become tough and fibrous. Tender asparagus is brittle and easily punctured. Slightly wilted stalks may sometimes freshen in cold water, but are usually undesirable. Angular or flat stalks are apt to be tough and woody.

### **Beans, lima**

Lima beans are generally classified as either large type or small type. Both types are usually shipped unshelled, but may occasionally be shelled prior to retail sale.

## **Quality**

The pods of good quality unshelled lima beans are well filled, clean, bright, fresh and dark green in color. Dried, shriveled, spotted, yellowing, or flabby pods indicate age or disease. Usually beans from such pods are tough and poor in flavor. Decay may appear on pods as irregular sunken areas, often with accompanying mold.

Shelled lima beans should be plump, with tender skins and good green or greenish-white color. Shelled beans are extremely perishable. They deteriorate quickly and at ordinary temperatures soon become moldy or slimy. Shelled limas should be examined closely for mold or breakdown and tested for tenderness by puncturing the skin. Hard, tough skins indicate overmaturity and lack of desirable flavor.

## **Beans, snap**

There are many varieties of both green and wax (yellow pod) snap beans. Some are flat, some oval, some round. Personal preference should dictate the color or shape to be purchased.

Most varieties of snap beans now grown for market remain relatively stringless when fully mature, but some develop stringiness as they pass the best stage for harvest. Overmature pods may become fibrous and tough whether stringless or not. Varieties differ widely in degree of fibrousness.

## **Quality**

To be of the best quality, snap beans should be fresh in appearance, clean, firm but tender, crisp, free from scars, and reasonably well shaped. All beans in a selected lot should be at approximately the same stage of maturity so that they will cook uniformly. Firm, crisp, tender beans will snap readily when broken. Pods in which the seeds are very immature are the most desirable. Length is generally unimportant if the beans meet the requirements for quality. If seeds are half-grown or larger, pods are likely to be tough or fibrous.

Stringiness is very undesirable and can be detected by breaking the bean and gently separating the two parts. A dull, lifeless, or wilted appearance indicates that beans have been held too long after picking. Decay appears as a soft, watery, or moldy condition.

## **Beets**

Early or new crop beets are usually marketed in small bunches with tops attached or partially cut back, or as topped beets in consumer size packages. The fresh, green tops of young bunched beets make excellent greens if the leaves are not discolored, turning yellow, or ragged, and if leaf stems are not tough.

Late crop beets are usually sold as topped beets. Medium-sized beets of the late crop are less likely to be tough or woody than either large or very small ones.



## **Quality**

Good quality beets are relatively smooth and firm. Soft, flabby, rough, or shriveled beets may be tough or woody, or involve excessive waste in preparation.

In judging bunched beets, the condition of the tops or leaves alone does not indicate the quality of the beets, and any defects of the leaves may be disregarded when only the beets are to be utilized.

Decay in beets usually appears as soft, wet areas. Beets showing any decay should be avoided.

## **Beet tops**

Beet tops are usually very young plants grown especially for leaf development. Occasionally the small undeveloped beets are attached.

## **Quality**

Good quality beet tops are young, clean, fresh, and tender. Slightly flabby or wilted tops can usually be restored to freshness in cold water if wilting is only in the initial stage. Beet tops showing any indication of a slimy or soft watery condition should be avoided.

## **Broccoli (Italian sprouting) (For Broccoli greens, see Greens)**

Italian sprouting broccoli varies somewhat in size and color, habit of growth, and the formation of the young sprouts, but in all variations it is the tender young stalks and branches and their bud clusters or heads that comprise the edible portion. The heads vary in size from about 1 inch to 5 or more inches in diameter, with a thick base stalk which separates into numerous branches which carry the bud clusters.

## **Quality**

Good quality broccoli is fresh and clean, with compact bud clusters which have not opened to the extent that the flower color is evident. The general color should be dark-green, deep sage-green, or purplish-green, depending on variety. Stalks and stem branches should be tender and firm. Toughness and woodiness of stalks and attached branches develop with age, the base portion of the stalk being most susceptible.

Yellowed or wilted leaves are indicative of age and lack of freshness. Bud clusters which are sufficiently open to show the distinct yellow color of the blossoms are usually overmature, although an occasional blossom does not indicate overmaturity. Wilted, flabby or noticeably bruised broccoli should be avoided.

## **Brussels sprouts**

Brussels sprouts are essentially miniature cabbages, which grow closely attached to the stem at the leaf axils of a tall plant of the

cabbage species. They are usually available during the fall, winter, and spring months.

### **Quality**

Brussels sprouts of good quality are hard or firm, compact, fresh, bright in appearance, and good green in color. Puffy or soft brussels sprouts are usually poor in quality and flavor. Wilted or yellowing leaves usually indicate aging and probable excessive waste in preparation for use.

Brussels sprouts with worm eaten leaves should be avoided, and also those with a smudgy, dirty appearance that often indicates the presence of aphids which may be found on the inner surfaces of leaves in numbers which will cause undue waste or make the product unfit for food.

### **Cabbage**

Several types of cabbage are marketed during the year. The general types are pointed, Danish, domestic, Savoy, and red.

Varieties that normally develop conical or pointed heads are usually included in the crop sold as early or "new" cabbage.

The Danish type includes varieties that mature relatively late in the season and normally develop hard, tight-leaved, compact heads. Danish type cabbage, even after trimming, appears tight and smooth-leaved around the top portion; when viewed from the stem end, it appears circular and regular in outline. This type of cabbage is widely used for winter storage. The color is usually white, especially during winter months.

Domestic type includes varieties that normally develop heads less compactly formed than those of the Danish type, and which are either round or flat in shape. Early, midseason and medium-late varieties of the domestic type are produced.

The Savoy type comprises the finely-crumpled-leaved varieties with round or "drumhead" shaped heads.

Red type includes all red varieties.

Early or new cabbage shipped from southern areas during the winter months is frequently harvested before the heads are firm and is not trimmed as closely as later production. New cabbage that has not been properly handled soon loses its desirable freshness.

Freshness of appearance of late or main-crop cabbage is not such an important quality factor as in the early crop. Late cabbage out of storage may be trimmed down to completely white heads and still be entirely desirable for most purposes.

### **Quality**

Prime quality heads of cabbage should be reasonably solid, hard, or firm; heavy or fairly heavy in relation to size, and closely trimmed (stems cut close to the head and only three or four outer or wrapper



leaves remaining). Early cabbage need not be as solid or firm as that of the late crop.

Worm injury, yellowing of leaves, burst heads, and decay are the most common defects of cabbage and may be easily detected. Cabbage seriously affected by any such defects should be avoided, but if heads are only slightly affected they may be trimmed and utilized to advantage. Considerable waste can generally be expected in heads of cabbage with yellow or discolored leaves.

Examination of a head of cabbage may sometimes reveal the base of some outer leaves separated from the stem with the leaves held in place only by the natural folding over the head. Such heads may be undesirably strong in flavor, or coarse in texture. Soft or puffy heads are usually poorer in quality, for most purposes, than firm or hard heads.

## **Carrots**

Carrots for fresh market are generally harvested before reaching full maturity and shipped immediately. Such carrots are smaller in size, more tender, milder in flavor, and brighter in external color than carrots which are harvested for storage.

A major portion of the crop is packed, with tops removed, in consumer-size film bags; or, with tops trimmed to a few inches in length, in small unwrapped bunches. In some markets, larger fall-harvested carrots from storage are also available from fall until spring and are preferred for some purposes.

## **Quality**

Carrots of good quality are firm, fresh, smooth, well-shaped, and generally well-colored. Wilted, flabby, soft, or shriveled carrots are usually undesirable. Those which are excessively forked, rough, or cracked may cause considerable waste in preparation for use. Decay usually appears as soft or watersoaked areas which may be partially covered with mold.

## **Cauliflower**

In preparation for shipment, cauliflower leaves are trimmed to a length just beyond the curd (the edible "flower" portion of the head), and only a few of the outer leaf stems are left to afford protection to the very tender "curd" which is easily bruised or broken. The number of leaf stems left has no relation to quality. Sometimes "wrapped and trimmed" heads of cauliflower are found on the markets with paper or film used as protection for the curd.

## **Quality**

Good quality in cauliflower is indicated by white or creamy-white, clean, firm, compact curd, with the "jacket leaves" (outer leaf portions remaining) fresh, turgid, and green.

Small leaves extending through the curd do not affect edible quality. Large or small heads, equally mature, are equally desirable. A slightly "ricy" or granular appearance is not objectionable unless the flower clusters are spreading. Spreading occurs when the flower clusters have developed enough to cause a separation of the clusters which makes the curd open or loose.

Spotted, speckled, or bruised curd should be avoided unless it can be trimmed without excessive waste. The appearance of aphids (plant lice) may be indicated by a smudgy or speckled appearance.

## **Celery**

Celery is washed, clipped, and usually precooled before shipment. During the packing process, damaged outer branches are removed and stalks are trimmed at the base. Stalks are packed in crates according to approximate diameter size.

Sometimes celery is trimmed down to the heart, and hearts are bunched for sale, or placed in consumer packages. The usable separate outer branches are sold for cooking purposes.

In practically all markets, celery may be found the year around. Supplies are generally Pascal type green celery, although in a few markets Golden type blanched celery may occasionally be available.

## **Quality**

Best quality celery is fresh, crisp, and clean, of medium length, thickness and solidity, with good heart formation, and branches that are brittle enough to snap easily. Pithy, woody, or excessively stringy celery is undesirable. Soft, somewhat pliable branches often indicate pithiness, and small hard branches are frequently very stringy or woody.

Celery is sometimes affected by "blackheart," which can be detected as brown or black discoloration of one of more of the small heart branches or leaves. Blackheart or the presence of insects or insect injury can be seen by separating the branches and examining the heart.

"Seedstems" appear as a solid, somewhat round stem replacing the desirable typical heart formation. Celery that has formed a large seedstem may have a somewhat bitter, undesirable flavor.

## **Chard**

Swiss chard, known on the market simply as chard, is a type of beet grown for the tops only. It is usually available in the summer and fall, with supplies coming mostly from nearby sources.

## **Quality**

Chard stalks should be fleshy and turgid, with leaves which are fresh, tender, crisp and free from insect injury. Wilted stalks may be tough, coarse, and stringy. Yellowed leaves or discolored stalks indicate aging or other injury. Coarse stalks indicate pithiness.



## **Chicory, endive, escarole**

The leaves of endive are narrow, curly, and finely divided. Escarole is a broad-leaved plant. Both are flat and of spreading growth. Chicory is broad-leaved, but of upright spreading growth. Blanched chicory is sold as Witloof chicory or as French or Belgian endive. In the blanched condition the leaves are folded and form an almost solid elongated head.

### **Quality**

Crispness, freshness, and tenderness are the essential factors of quality. Wilted plants can often be freshened in cold water, but may entail excessive waste. Tough, coarse-leaved plants are undesirable since the usually delicate bitter flavor is apt to be so intensified as to be objectionable. Toughness or tenderness can be determined by breaking or twisting a leaf.

When unblanched, the leaves should be green, but if blanched the center leaves should be creamy-white. Witloof chicory should be entirely creamy-white. Decay appears as a browning of the leaves or as a slimy condition.

## **Collards (see Greens)**

## **Corn**

### **Quality**

Fresh corn found on the markets is usually one of the commercially grown "sweet" corn varieties, although occasionally an early maturing variety of field corn may be sold as fresh corn.

Sweet corn may have either yellow or white kernels, depending on the variety, but most commercial production is of the yellow varieties. It is sometimes displayed with a small portion of the husk cut away to allow consumer inspection of maturity and color of kernels.

Fresh corn is usually hydrocooled, or precooled by some other method, and shipped to markets under refrigeration. It is especially subject to loss of flavor and tenderness from warm temperatures or from any undue delay from time of harvesting to time of use.

### **Quality**

Best quality ears of corn are well filled with bright, plump, milky kernels that are just firm enough to offer slight resistance to pressure. Husks should be fresh and green. Dry, yellowed or straw-colored husks or shrinking kernels are an indication of age or damage.

Immaturity is indicated by small, soft, undeveloped kernels. Such kernels lack flavor when cooked. Overmaturity is indicated by large, excessively firm kernels, which are usually deeper in color than when at the most desirable maturity stage.

## **Cucumbers**

### **Quality**

Cucumbers should be firm, fresh, bright, well-shaped, and good green in color. A small amount of whitish green color at the tip and on the ridged seams is not objectionable in certain varieties. The flesh should be firm and the seeds immature.

Withered or shriveled cucumbers should be avoided as they are apt to be tough and somewhat bitter. Overmature cucumbers are generally dull or yellowed in color, and have an overgrown, puffy appearance. Cucumbers in this condition are excellent for certain kinds of pickles, but are not suited to fresh use. Decay usually appears on the surface first as water-soaked spots, but later as sunken, irregular areas.

## **Eggplant**

### **Quality**

A good quality eggplant is firm, heavy in relation to size, with a uniform dark rich purple color, and free from scars or cuts. A wilted, shriveled, soft, or flabby eggplant will usually be bitter or otherwise poor in flavor.

Worm injury can be seen on the surface and, if severe, will probably indicate excessive waste. Decay appears as dark brown spots on the surface, and progresses very rapidly.

## **Garlic**

A garlic bulb comprises a varying number of cloves, each in its own papery sheath, with all cloves enclosed in an overall outer skin. Bulbs with the outer skin split and the cloves spreading are called "splits" or "doubles." Such bulbs are not objectionable if the individual cloves are plump and uninjured.

Garlic is occasionally marketed with the tops attached and plaited in strings holding 50 or more bulbs on each string. But it is generally sold with tops removed, in small, partially transparent consumer packages which usually contain two bulbs, or a number of separated cloves.

### **Quality**

Young, plump cloves of garlic with the outer skin or sheath unbroken are the most desirable. Such cloves are usually contained in bulbs that are clean, compact, and "well cured," which means dry, but not soft and spongy, and with outer skin intact.

Soft or spongy garlic may have begun to sprout or be otherwise injured, and is undesirable. Split or broken skins of cloves may indicate sprouting. Decay may appear as mold, dry rot, or soft rot. Dry rot usually causes shrinking or shriveling and may progress downward from the top of the bulb until the whole bulb is powdery and useless.



## **Greens**

Spinach, beet tops, kale, turnip tops, leafy broccoli, chard, collards, cress, dandelions, mustard, sorrel, chicory, endive, and escarole are the most common leafy type vegetables used for greens. Others appear in markets occasionally. Most types of greens are prepared and used in the same way as fresh spinach.

### **Quality**

Best quality greens are fresh, young, tender, and green. Plants or leaves of any of the leafy vegetables to be used as greens, which show insect injury, coarse stems, dry or yellowing leaves, excessive dirt, or poor development, are usually lacking in quality and may cause excessive waste.

In any type of greens, the presence of seedstems indicates age and toughness. Flabby, wilted plants and leaves are generally undesirable.

## **Lettuce**

Four plant types of lettuce are sold in retail markets: Crisp-head, butter-head, loose-leaf, and cos (romaine). A very large majority of commercial lettuce shipments are of the crisp-head type (commonly called Iceberg). Heads of this type are relatively large and solid, with large, medium-green fringed outer leaves and crisp, blanched inner leaves, which are folded into a dense mass.

Butter-head varieties produce smaller, somewhat rosette-like heads with leaves relatively smooth, fairly light colored, soft, tender, and succulent. The most common varieties are Bibb, Big Boston, and White Boston.

Cos (Romaine) types are distinguished by the tall cylindrical shape and long, folded, very dark-green leaves. Romaine, as this type is generally called, carries well for long distance shipment and has become popular with an increasing number of consumers.

Loose-leaf varieties do not form heads and are not considered suitable for long distance shipping. This type is grown extensively in greenhouses or in local or home gardens and is considered excellent for many purposes. Leaves of this type range from very light yellowish-green to dark green or reddish-green, depending on variety.

### **Quality**

Good quality crisp-head lettuce should be clean, crisp, and tender, with heads fairly firm to firm. Heads should be free from rusty appearance, decay, and excessive outer leaves. Lettuce with excessive "tipburn"—which usually appears on inner leaves as small, ragged, brown areas—is undesirable.

Occasionally lettuce containing advanced seedstem growth may be found in markets. Such heads may have a slightly bitter flavor, and the removal of the seedstem may cause excessive waste. Heads with seedstems can often be detected by wide spaces between the base

portions of the outer leaves and an abnormal swelling of one side of the top of the head. Sometimes the relatively hard seedstem growth can be felt at the point of swelling.

Decay, which may be indicated by water-soaked or discolored areas on outer leaves, sometimes deeply penetrates the interior of a head of this type.

Butter-head, romaine, and loose-leaf types should be clean, fresh, and tender. Usually such lettuce can be fully examined for discoloration or other defects.

## **Mushrooms**

Mushrooms belong to a group of plants known as fungi. They are very different from ordinary plants in appearance, structure, and growth. Only one type of mushroom is cultivated in the United States. It is a horticultural form of *Agaricus Campastris*, a species that also grows "wild." This type is popular because of its attractive white, clean appearance.

### **Quality**

Best quality mushrooms are clean, fresh in appearance, white to creamy-white in color, and free from open caps, pitting, discoloration, wilting, or other injury. For most purposes, sizes ranging from  $\frac{3}{4}$  inch to 3 inches in diameter are usually preferred.

If mushroom caps are partially open, the "gills" (fluted formation between cap and stem) should be light in color. Brown or black gills indicate over-age mushrooms which should be avoided.

## **Okra**

Okra is the immature seed pod of a plant of the Hibiscus family. It is most commonly utilized as a soup ingredient, but is frequently used for other purposes.

### **Quality**

Young, tender, fresh, clean pods of small to medium size (2 to 4 inches in length) are usually of good quality. Such pods should snap easily when broken and are easily punctured. Dull dry, appearing pods indicate excessive age and are usually hard, woody, and fibrous, with hard seeds. Also, pods that are not fresh may be shriveled, discolored, and lacking in flavor.

Depending on variety, okra pods may be green or whitish-green, varying somewhat in size and ridging.

## **Onions (dry)**

Two general classes of onions grown in the United States are found on retail markets: the mild flavored types, either large and elongated, or flat; and the usually stronger flavored types, generally globe shaped and medium in size. The former are Spanish or Bermuda types, and the latter are known as "globe" or "late crop" types.



The Bermuda type is flat in shape, sweet and mild, and usually may be found in markets from March to June in either yellow, white, or red varieties. The Spanish or Valencia type is a large, somewhat elongated, mild, sweet onion which may be either light-yellowish, brown, or white in color. They are available in most markets from August through April.

“Globe” or other “late crop” onion types are mostly somewhat globular in shape, with yellow, white, red, or brown skins, depending on variety. These onions usually keep extremely well under proper storage conditions and are marketed throughout the year.

“Boiler” is a term used to designate small-size onions.

### **Quality**

Bright, clean, hard, well-shaped, mature onions with dry skins are usually of good quality. Onions in which the seedstem has developed are undesirable. A thick, tough, woody or open condition of the neck, or a visible portion of the stem indicates seedstem development which causes excess waste in utilization.

Misshapen onions are objectionable only because of probable waste in preparation for use. The most common forms of off-shape are “splits,” “doubles,” and “bottle necks”—terms which are largely self-explanatory.

Moisture at the neck of an onion is an indication of decay which may not be visible but may cause the onion to be entirely unfit for use. Decay may also appear on the outer scales as wet, discolored, or moldy areas.

### **Onions (green), Leeks, and Shallots**

Green bunched onions are usually early white or bulbless varieties harvested in an immature condition when the partially developed bulb reaches desired size. Leeks, which are considerably larger but are similar to onion plants, have broad dark green solid leaves, and straight, thick white necks with bases about one inch or more in diameter. They have an agreeable, relatively mild flavor and are used cooked or raw, usually for flavoring. The shallot is another species related to the onion. Shallots grow in clusters as practically straight stems with only slight bulb development, and—like green onions—are harvested before maturity. Shallots are much in demand in some areas for the same purposes for which green onions are commonly used. Mature shallots are sometimes utilized for flavoring.

### **Quality**

Good quality green onions, leeks, or shallots, should have green, fresh tops, medium-sized necks well blanched for 2 or 3 inches from the root; and should be young, crisp, and tender. Yellowing, wilted, or discolored tops may indicate flabby, tough, fibrous necks or other

undesirable qualities. Except for appearance, bruised tops are unimportant in utilization.

## **Parsley**

Parsley is available throughout the year. Three types are sold: plain or flat leaf, curled leaf, and the Hamburg or turnip-rooted. The whole plant of the Hamburg type is often used—the root for flavoring, and the top for garnishing and flavoring.

### **Quality**

Parsley of best quality should be bright, fresh, green, and free from yellowed leaves or dirt. Wilting and yellowing denote age or damage. Slightly wilted parsley can be revived to freshness in cold water, but badly wilted leaves are unattractive and otherwise undesirable.

## **Parsnips**

The parsnip is a winter vegetable only. Its flavor is not fully developed until prolonged exposure to temperatures around 40° F. or lower. Parsnips are usually stored after harvest and sold throughout the winter and early spring.

### **Quality**

Smooth, firm, clean, well-shaped parsnips of small to medium size are generally of best quality. Soft, flabby, or shriveled roots are usually pithy or fibrous. Softness may also be an indication of decay, which usually appears as a gray mold or a soft rot. Misshapen roots are objectionable because of waste in preparation for use. Large, coarse parsnips are apt to have tough, woody cores.

## **Peas**

Fresh peas lose their sweetness and delicate flavor very rapidly after they reach market stage. Peas of approximately the same size and maturity should be selected to facilitate uniformity in cooking.

### **Quality**

Peas of best quality are young, tender, and sweet. Pods should be fresh, uniformly somewhat light-green in color, slightly velvety to the touch, and fairly well to well filled with well developed peas.

Pods containing excessively immature peas are usually flat, dark green in color, and may have a wilted appearance. Pods that are swollen, noticeably light in color, or flecked with grayish marks may be in an advanced stage of maturity and contain tough and poorly flavored peas.

Yellowing or whitish-green colored pods indicate age or damage and should be avoided. Water-soaked pods or those affected with mildew indicate poor quality peas, and the probability of excessive waste in preparation for use.



## Peppers

Both sweet peppers and the pungent or hot type may be found in many markets.

Sweet peppers are usually of the "bell" type and are usually shipped and sold when still green in color. They change from deep-green to bronze-red or bright-red in color as they continue to mature. Occasionally consumers desire red- or bronze-colored peppers for certain purposes. Pepper varieties vary in shape, and individual pepper shapes vary somewhat within any variety. Selection of shape is a matter of personal preference.

### Quality

Good quality sweet peppers are fresh, firm, bright in appearance, thick fleshed, and with a fresh, green calyx. Immature peppers are usually soft, pliable, thin-fleshed and pale green in color. A firm pepper may yield to slight pressure but is not shriveled, limp, or pliable. Peppers that are not fresh may also be shriveled or soft, and dull in appearance.

Constricted, crooked, or deformed peppers of otherwise good quality, are objectionable only because of possible waste, or because the shape is unsuited to a particular use. Injuries which penetrate the fleshy wall should be avoided due to susceptibility to decay. Wilted or darkened calyxes denote a lack of freshness. Decay may appear as water-soaked, bleached, or blackened areas that may or may not be noticeably sunken.

The pungent or hot varieties are sold in either the green or red stage of maturity, and vary in size from the small Chili peppers to sizes nearly as large as the bell type. They are generally desired with red color. Chili and Cayenne peppers are sometimes threaded on strings and dried prior to sale, or dried on the plant and displayed for sale with peppers and plant as a unit.

The same quality characteristics noted above for sweet peppers also apply to fresh hot peppers.

## Potatoes

"New" or early potatoes are dug before they reach full maturity and are marketed immediately. Because of immaturity and warm weather at the time they are dug and shipped, they are much more subject to injury from rough handling than are a great majority of the potatoes from the "late crop." The immature skins are easily injured and often present a discolored, ragged, feathery appearance.

Much of the more mature late crop of potatoes is stored and shipped throughout the period from harvest until spring.

Immature late crop potatoes are occasionally seen in the markets. They usually show feathery skins and discoloration not common in the great majority of late crop shipments. Such potatoes are not necessarily undesirable, but are not adapted to long keeping.

Washing or brushing adhering soil from potatoes is now a general commercial practice in practically all producing areas.

## Quality

Potatoes that are sound, firm, relatively smooth, and reasonably well shaped are usually of good quality for general purposes. Special cooking qualities vary for the many varieties and production areas, as do shape, size, and external color.

Probably the most commonly used nontechnical classification of potatoes is a generalized division into four widely inclusive types: round white, long white, russet, and red.

Principal round white varieties are: Katahdin, mostly stored and sold as "late crop"; Cobbler, utilized for both "new" and "late crop" purposes; Kennebec, sold both as "new" stock and stored for sale as "late crop," and Sebago, also sold both as "new" stock and as "late crop."

The outstanding long white variety is White Rose, which when shipped from the area of heaviest production, California, is commonly known as "California Long White." This variety is most frequently sold as "new crop," but may also be stored for later use.

By far the most prominent russet variety, Russet Burbank, widely known for baking quality, is generally elongated in shape, and is marketed from late summer to late spring, primarily from storage stocks. Other principal russet varieties are: Russet Rural, generally round in shape and usually sold as storage stock; and Early Gem, which resembles the Burbank in appearance, and is sold both as "new" and "late crop."

Among the many red varieties, those produced in greatest volume are Red Pontiac, sold both as "new" and storage stock; Red La Soda, also sold as "new" and "late crop"; Red McClure, sold primarily as "late crop" from storage; and Bliss Triumph, sold primarily as "new crop." All of these red varieties are round types.

With some trial experience, several of these varieties can be identified and selected for specific cooking uses by color and shape, or frequently by designated areas of origin.

Medium-sized potatoes are usually the most desirable for general use, but size does not necessarily affect quality. In some shipping sections, many potatoes are packed in consumer-size bags containing 10 pounds or more. Also, potatoes are frequently packaged at destination markets in consumer-size paper or transparent film bags of 4, 5, or 10 pound capacity by wholesale or retail organizations. In some cases the size range (such as 2¼ to 3¼ inches) may be marked on such bags. In other cases fully or partially transparent bags may allow judgment of sizes to suit the buyer's preference.

Wilted, leathery, or discolored potatoes are unsatisfactory for most purposes.



Damage by "sunburn" caused by field exposure to sun, shows as a definite green to deep-green area on a part of the potato surface. The development of green color called "Greening" or "Lightburn" may occur in storage, in the market display or wherever potatoes are exposed for any considerable time to either natural or artificial light. If surface greening has progressed to a noticeable degree, the potatoes may have an undesirable bitter taste.

Potatoes may sometimes be undesirable because of a hollow center known as "hollow heart." Depending on the size of the cavity, the waste may be negligible or excessive. Other internal defects which occasionally affect potatoes are "blackheart" and "internal black spot." Unfortunately, external examination will seldom disclose any of these internal defects, but if shippers, wholesalers, and retailers have been careful to have proper inspections made, seriously affected potatoes should seldom be a problem to the consumer.

In late spring or early summer, old-crop potatoes may be shriveled, spongy, or sprouted. Such conditions may cause considerable waste and unsatisfactory cooking quality.

Misshapen potatoes should be judged on the basis of the probable waste in preparation for use. Decay may appear as either a wet or dry rot, affecting either the surface or the interior flesh, or both. It may be so slight that it can be cut away with little waste or may cause a potato to be completely inedible. Generally, any decay should be avoided.

## **Radishes**

Varieties of radishes vary in color, shape, and size, but most radishes shipped commercially are red, round varieties, harvested when diameter sizes reach approximately  $\frac{3}{4}$  inch to  $1\frac{1}{8}$  inches.

Radishes are available on most markets throughout the year. Occasionally they are sold in bunches with tops attached, but usually they are displayed for sale in small consumer-size transparent film bags, many of which are packed at the point of production and shipped long distances. Some radishes are shipped in crates and placed in consumer-size bags at some specialized plant near the markets being supplied.

In some of the largest producing areas, radishes are mechanically harvested, with the tops being removed in the process. Many mechanically harvested radishes normally show some skinned surfaces, cracks, and small cuts and bruises which are detrimental only to the appearance, provided the radishes are in a desirable state of freshness.

## **Quality**

Good quality radishes are well formed, smooth, firm, tender, crisp, and mild in flavor. Pithy or spongy radishes are undesirable, as are those which show signs of age, wilting or decay. Size, color, and

condition of radishes can generally be judged reasonably well through the common transparent consumer package.

## **Rhubarb**

Markets are supplied early in the year with hot-house (forced) rhubarb from local sources or from distant producing districts. The three Pacific Coast States and Michigan are among the chief sources of forced rhubarb.

Field grown rhubarb is usually available from nearby growing areas in late spring and early summer months. Forced rhubarb is usually light-pink or pale-red in color with undeveloped yellowish-green leaf portions, while field grown rhubarb stalks usually have a dark, rich red color.

## **Quality**

Good quality rhubarb is fresh, firm, crisp, tender, and bright in appearance. Stalks should not be excessively thin.

Well colored rhubarb is usually well flavored, but some varieties grown on certain types of soils may be desirable with little color. The younger stems having immature leaves are usually the most tender and delicate in flavor. Wilted or flabby stalks may indicate stringiness, lack of freshness, and poor flavor.

Stalks that have grown too long prior to harvest are often over-size and may be poorly colored, pithy, tough, and wasteful in normal utilization. Tenderness and crispness can be tested by puncturing the stalk.

## **Spinach**

Spinach is usually available both as whole plants and as cut leaves packed in consumer-size transparent film bags. It is shipped in large quantities from several states, and at most markets supplies from the distant producing districts are supplemented by receipts from nearby sources.

## **Quality**

Good quality spinach plants should be well developed and relatively stocky. Straggly over-grown plants or plants with seedstems are generally undesirable. Leaves should be clean, fresh, tender, and good green in color. Yellow, discolored, wilted, bruised or crushed leaves should be avoided. Small yellowish-green, undeveloped heart leaves are natural and should not be considered objectionable. Decay appears as a soft, slimy disintegration.

## **Squash**

There are many varieties of both summer and winter squash which vary widely in color, size, and shape.

The most common white or creamy-white variety of the summer type is the White Bush Scallop which is disk-shaped and smooth with



scalloped edges. It is also called Cymling and Patty Pan. Most yellow summer varieties are elongated-bulbous in shape with a rough warty rind and are designated as either Straight or Crook-Neck.

Green, green-black or green-striped varieties, such as Zucchini and Italian Marrow are elongated-cylindrical in shape. Summer varieties are of best quality in an immature stage, when the rind is tender and seeds are small and undeveloped.

Common fall and early winter varieties are the green-colored corrugated Des Moines, Acorn, or Danish, the buff-colored Butternut, and the green or golden Delicious.

Most of the late winter squash varieties are relatively large and have a light-green, dark-green, bluish-green, or orange-colored rind which varies by variety in thickness, external texture, and roughness.

### **Quality**

Summer squash should be fresh, fairly heavy in relation to size, free from cuts or noticeable bruises, crisp, and tender. Summer squash which has developed to a hard-rind stage usually has hard or semi-hard seeds. Since for many uses seeds and rind are not discarded, both the hard rind and well developed seeds are generally undesirable. Also, the flesh of hard-rind summer squash is apt to be stringy.

The rind of winter squash should be hard. Softness of rind may indicate immature, thin flesh, which may be watery and lacking in flavor when cooked. Winter squash is susceptible to decay and should be carefully examined. Decay usually appears as a water-soaked area which may show brown or black mold growth.

### **Sweetpotatoes**

There are two general types of sweetpotatoes. One type has soft, moist flesh when cooked and high sugar content (sweetpotatoes of this type are commonly, but incorrectly, called yams). The second type, when cooked, has a firm, dry, somewhat mealy flesh, which is usually light yellow or pale-orange in color, as contrasted to the usually deeper-yellow or distinctly orange-red colored flesh of the moist type.

The skin of the dry type is usually light yellowish-tan or fawn-colored, while the skin of the moist-fleshed varieties may vary in color from whitish-tan to brownish-red.

Varieties of each type vary considerably in shape, but most moist-fleshed varieties are usually more plump in shape than most dry-fleshed varieties.

A mixture of types or a mixture of varieties within types is undesirable because of lack of uniformity in cooking, as well as differences in flavor and color of flesh.

### **Quality**

Best quality sweetpotatoes are clean, smooth, well-shaped, firm and bright in appearance. Selection of type is a matter of personal preference.

Seriously misshapen sweetpotatoes and those showing growth cracks or wireworm injury are apt to be undesirable because of the waste entailed in preparation for use. A damp appearance may indicate decay in adjacent specimens.

Decay in sweetpotatoes usually progresses and spreads very rapidly and generally imparts a disagreeable flavor to apparently unaffected flesh even if the decayed portion is removed before cooking. Decay may appear as a soft wet rot frequently accompanied by mold growth, or as discolored, shriveled or sunken areas of dry rot. The ends of the tubers are most frequently affected, although decay often develops in other areas. Another type of decay occasionally appears as greenish-black variable-sized circular spots. If occurring in bruised or injured areas, such spots may be irregular rather than circular in outline.

## **Tomatoes**

Tomatoes are available throughout the year. In most markets the largest portion of the supply during late fall, winter and spring months arrives by long distance shipment from California, Florida, and Texas.

Considerable quantities are imported from Mexico, Cuba, and the Bahamas during the winter. Nearby producing areas furnish tomatoes to many markets in summer months, and additional supplies originate in domestic greenhouses in the early months of the year.

The best flavored tomatoes are those that are allowed to ripen on the vines. For this reason, tomatoes from nearby sources are usually the most desirable, but are available in most markets for limited periods.

Tomatoes that are shipped long distances are generally picked while still green, but advanced enough in maturity to ripen and attain good color under proper conditions. Most long distance shipments are ripened under controlled temperature and humidity conditions in special ripening rooms at receiving markets and are then usually packed in consumer-size containers. However, improved growing, transportation, and packaging practices have enabled many shippers to harvest tomatoes at the "breaking" (start of color change) or "pink" stages of maturity and thus deliver a more flavorful product than those harvested when still completely green in color.

## **Quality**

Good quality tomatoes are well formed and plump, of uniform red color, free from bruise marks and not overripe or soft.

Scars, roughness, slight deformities, irregularity of shape, and well healed growth cracks are typical of the many possible defects of tomatoes which are objectionable only from the standpoint of appearance or the waste involved in preparation for use.



Ripe tomatoes are particularly susceptible to damage by bruising from dropping, pinching or other rough handling.

Tomatoes that have been damaged by worms are usually very undesirable. Those having unhealed growth cracks may be satisfactory for immediate consumption, but will seldom keep for more than a very limited time. Puffy tomatoes may have poor flavor and involve excessive waste in preparation. Puffiness can usually be distinguished by light weight and angular shape.

Decay is usually indicated by mold growth, but may appear as soft discolored areas.

## **Turnips**

Early turnips are usually relatively small and tender and are sold in bunches with tops attached or with tops partially cut back. The early crop, grown principally in Florida and Texas, is marketed immediately after harvesting, usually during the winter months.

Late or main crop turnips are marketed with tops removed, and are frequently stored after harvest for later shipment. Both early crop turnips and late crop turnips from a previous harvest may be available on markets during winter months.

Rutabagas are a separate species of the general turnip family. They are usually large and elongated, with yellow flesh and a distinctly different flavor.

## **Quality**

Turnips that are heavy in relation to size, smooth and firm, with few leaf scars around the crown, and with very few fibrous roots at the base are usually of good quality. When tops are present on bunched turnips the tops should be fresh, green, young, and turgid.

Shriveled or soft turnips may be tough when cooked. Large, coarse, overgrown turnips, especially if light in weight for their size, are apt to be tough, woody, pithy, hollow, or strong in flavor.

## **Watercress**

### **Quality**

Watercress should be fresh, young, crisp, tender, rich medium-green in color, and free from dirt or yellowed leaves.

Wilting, yellowing, or other discoloration of leaves indicates over-age, lack of desirable freshness, or other damage.

## Desirable Characteristics for Commonly Used Fresh Fruits and Vegetables

**Apples:** Proper variety for intended purpose; fresh and firm; well colored for the variety; free from bruises.

**Bananas:** Bright, fresh appearance; firm, unscarred; full yellow or brown flecked yellow color if for immediate use.

**Berries:** Fresh, clean, firm, with bright appearance; well colored for the type.

**Cherries:** Fresh, bright, plump; good color for the variety.

**Grapefruit:** Firm; heavy for size, relatively smooth, well shaped.

**Grapes:** Plump, fresh, highly colored for the variety, firmly attached to stems.

**Oranges:** Firm, heavy for size, reasonably fine textured skin for the variety, good color for the variety.

**Peaches:** Bright, plump, fresh appearance, yellowish or creamy background color with overlying blush or red, fairly firm to firm, free from bruises.

**Pears:** Clean, plump, fairly firm to firm, free from bruises.

**Cantaloups:** Well netted, "full slip" stem scar, color changing to yellowish-buff or gray, characteristic aroma.

**Watermelons:** Good red flesh which appears firm and fresh, is not stringy, not watery or mealy, and contains dark colored seeds.

**Asparagus:** Fresh, firm, with compact tips, and entire green portion tender.

**Broccoli:** Fresh, clean, compact bud clusters.

**Cabbage:** Firm to hard, free from yellowing, worm injury or bursting.

**Cauliflower:** Clean, firm, compact, white or creamy white color, with fresh, green portions of outer leaves.

**Celery:** Fresh, crisp, clean, good heart formation, with outer branches firm, thick, tender and brittle.

**Corn:** Ears well filled with bright, plump, milky, kernels which offer only slight resistance to pressure. Husks fresh and green.

**Lettuce:** Crisp-head (Iceberg): Clean, crisp, tender with well shaped heads which are fairly firm to firm. Also free from discoloration and excessive outer leaves. Butterhead, romaine and loose-leaf: clean, fresh, tender, free from discoloration.

**Dry Onions:** Bright, clean, hard, well shaped, with dry skins and necks, and free from seedstems.

**Peas:** Young, tender, sweet, well developed peas in fresh green pods.

**Potatoes:** Proper variety or type for intended use; sound, firm, relatively smooth, reasonably well shaped.

**Squash:** Summer varieties: fresh, crisp, tender. Winter varieties: Hard rind, deep meaty flesh.

**Sweetpotatoes:** Proper type for intended use; clean, bright, smooth, well shaped, firm.

**Tomatoes:** Well formed, plump, fairly firm to firm, uniform red color, free from bruises.